

DUE WEST ES
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2009/2010 SCIENCE FAIR
RULES & GUIDELINES

Congratulations on deciding to explore the wonderful world of science with a science fair project! Participating in the science fair will give you a chance to better understand the world around you. Your project can be fun and educational at the same time. Everybody who participates will receive recognition. First, second and third place in each grade will receive awards. Just by participating, you will have gone above and beyond your school class requirements, showing the qualities of a winner.

Now that you have chosen your science fair topic, there are some guidelines you should follow in completing and presenting the results of your project. Results from your science fair project should be presented on a poster presentation board. The actual materials used in experiments do not need to be presented, nor will the student be present during judging. Students in grades K through 2 who choose to present a labeled collection or a model must bring the actual collection or model for judging. A presentation display board should also be used for collections and models so that a title and any discussion of the project may be displayed. The title of your project, your name, grade, school and teacher of the student must appear **only on the back** of the poster presentation board. (A blank form of the appropriate size is provided with this information.)

Your parents are encouraged to assist you, but you must be the main scientist. The role of your parent should be to offer encouragement, to help test ideas, and to offer an extra set of hands and eyes. A project does not have to be complicated to be a good science fair project.

Date and Time: Projects may be dropped off at school on **Monday, March 1 between the hours of 7:15 and 7:45AM** in the media center. A parent may do the check in for the project; student does not have to be present.

Location: Due West Elementary

Judging: Judging will take place on March 1. The areas of judging are: knowledge of the subject, depth of study, creativity/originality, and visual presentation of project. Students will discuss their projects with the judges.

Project Pick Up: Please pick up your child's project on Wednesday, March 3. If your child won first or second place, then leave the project to go on to the TMC of PTAs Science Fair. Judging at TMC will be March 10 and the reception for TMC winners will be held March 11 at 6:30pm at Vaughan ES.

If you have any questions, you can contact Jennifer Gilbert at 770-218-0416 or

caedmon@bellsouth.net.

GUIDELINES: Grades K-2 presenting a model or collection

1. Your model or collection must be scientific in nature. A collection of leaves or one of animals that live in the rain forest would be acceptable; a collection of cars or dolls would not. Likewise, a model of the human eye or of the earth's crust would be an acceptable scientific model; a model of a car or house would not, unless scientific aspects such as an engine or solar panels were the focus.
2. Details of the model or collection must be accurately and clearly labeled in scientific language. A model of a plant, for example, should have the various parts of the plant (roots, stem, etc.) labeled. Each item in a collection must be individually labeled. Common names can accompany the scientific name if both are used. For example, a collection of plants may be labeled with their scientific names (e.g., Benjamin Ficus) and with their common name (weeping fig tree).
3. Scientific facts, as well as personal observations and conclusions about the model or display are helpful in showing that you understand your project well. This additional information can be included on your poster display.

Remember to include a presentation display board with your collection or model. The presentation display board should display your project title and any interesting information you would like to mention. The title of your project, your school's name, your name grade and teacher, should be displayed on the back only.

GUIDELINES: Grades 3-5 and all others conducting an experiment

Steps of the Scientific Method

1. Present your **topic as a question**, e.g., "Does taking a shower use less water than taking a bath?" Your topic must be clearly visible on your poster display.
2. After presenting your topic as a question, **take a careful guess at what you will find out from conducting the experiment**. This careful guess, or prediction, is called a *hypothesis*. Often a hypothesis is formed after researching the subject by asking experts questions or reading. A hypothesis for the question above might be "Showers use less water than baths". A good hypothesis should clearly answer the questions, be able to be answered with an experiment, and be brief and to the point. Your hypothesis should also be clearly written on your display.
3. Now you are ready to plan your experiment. First you must **create a shopping list for all the materials, with size and quantities of each, you will need for your experiment**. For example, instead of simply listing a jar as a needed material, you should list precisely what type and quantity of jars you will need, e.g., three 2 liter, wide-mouthed jars. This list of materials should also be included on your poster.

4. The next stage in planning an experiment is to **write an experimental procedure**, which is simply a list of the directions you will follow when conducting your experiment. Your experimental procedure should also be included on your display. Directions should be detailed and in the correct order. To fairly test your hypothesis, the experiment must be controlled carefully. You should change only one thing at a time and observe and record results. Conditions that are deliberately changed in your experiment are called *variables*. For example, if you are testing which type of detergent cleans clothes the best, you should vary only the detergent and keep all other factors constant, or the same. The water you use, the type of stain you try to clean and the method you use to clean should all remain the same throughout the experiment. You may also choose to use a *control* in your experiment. A control has no variables and is useful for comparison with other results. For example, a control in the experiment described above might be plain water with no detergent. A control is useful for deciding just how much of an effect your variables have.
5. Now you are ready to start your experiment! You must determine some way to **measure the results of your experiment**, by counting, measuring a distance or a weight, recording temperature changes, etc. Scientists use the *metric system* of measurement. **All of the measurements in your science project should be made in, or converted to, metrics.** For example, distances should be in meters rather than yards, weights should be expressed in kilograms instead of pounds, volume should be in liters rather than pints, quarts or gallons, and temperature should be written as Celsius and not Fahrenheit. Always when you make a measurement, there is some error involved. Therefore, it is a good idea to repeat each measurement at least three times. A better experiment has more testing. The more tests or measurements, the more valid the result will be. When your experiment is complete, you must find a clear and simple way to present the results, also called the *data*. Using a graph, such as a line graph or bar graph, is a good way to show results on your display.
6. Finally, you must present a **concluding statement** that will either support or not support your hypothesis. Don't worry if your hypothesis turns out to be wrong; this is very common in scientific research. Just be prepared to explain your conclusion. If your results were inconclusive and didn't prove anything, explain how you would change the experiment to get better results next time. You may also mention other things that you learned, as well as any problems you ran into, and how you worked the problem out in your concluding statement.

In summary, science fair participants must include the following basic information on their presentation display board. Additional information may be included as discussed throughout these guidelines:

- The title of your project on the front. The title may be the actual problem statement, in which case it should be in the form of a question.
- A 3x5 card taped to the **BACK** of your display with your name, the title of your project, your grade, and your teacher. **If your name is visible on the front of the entry your project will be disqualified.**
- Acknowledgment of who helped you (your mother, father, teacher, etc.).
- A bibliography or listing of books, articles and any other sources you used to

research your project. Each reference should include the author's name, title of the book or article, publisher, year published, where published and pages used should appear on the back.

In addition, participants conducting a scientific experiment must also include the following on their presentation display board.

- The problem/testable question of your project. State the problem or testable question you meant to solve or answer.
- A hypothesis.
- The data should be recorded in graph and/or table form.
- The experimental procedure you followed, which should include a detailed list of materials with sizes and quantities included, and a step-by-step explanation of the experiment. Pictures or drawings are helpful.
- The measured results, including any observations you may have made and any charts or tables which may help to show your results. If you use a laboratory notebook to record results, you may place the notebook in front of your display, but please do not put your name on the notebook where it will be visible to the judges.
- An explanation of your results, called a conclusion. This statement should tell what you learned from the experiment. You may refer to charts, tables or observations for this section.

Displaying your Project

- Use sturdy materials, such as heavy cardboard. Presentation Display boards are often available in office product stores, educational supply stores (e.g., School Box) and department stores (e.g., Wal-Mart and Target).
- **Displays must be able to stand on their own and be no more than 3 feet tall, 3 feet wide and 2 feet deep.** Displays may be one-sided, two-sided (like an open book) or three-sided. Sections can be fastened together with strong tape. **Any displays that do not meet these criteria will not be accepted.**
- The title of the project must be clearly visible on the display. Lettering for the title should be large and bold.
- Display should be neat and easy to read but feel free to be creative and colorful.
- All extra materials, including models and collections, must either fit on the display or in front of it.

Judging

- Under no condition may parents or students contact the judges to dispute the status of entry. All decisions of judges are final.

Use this card on the back of your poster board for identification.

Title of project _____

Name of school _____

Student's name _____

Grade Level _____

Teacher's name _____